Growing WILD

Spring/Summer 2000

Utah's Project WILD Newsletter

Utah's Sensational Shorebirds!

When many people picture shorebirds, they envision a group of small brownish-gray birds darting about, robotically probing the mud or sand along a shore like tiny wind-up toys. Shorebirds like these represent only a few of some nearly 50 different species of shorebirds found in various regions of the United States and over 200 species worldwide.

Shorebirds are a diverse group of birds ranging widely in size, shape of bill, coloration and behaviors. The term "shorebird" however is a good one because almost all shorebirds are, at some time in their lives, associated with the water's edge, be that water an ocean, an inland sea, a lake, a river or a prairie pothole. In Europe, shorebirds are called waders. Included within the shorebird group are the elegant avocets and stilts, the compactly built plovers, which include the well-known killdeer, the delicate sandpipers, the yellow-legged yellowlegs, the swimming phalaropes, the larger godwits, curlews and whimbrels with various curvatures of their bills, the long-billed Wilson's snipe and similar dowitchers, and the rock-loving turnstones, oystercatchers and surfbirds. Other shorebirds are the ruffs, tattlers, stints, knots, dunlins, willets and dotterels. They are all unique, but identification is surely a challenge, indeed!

Shorebirds can be separated into four main "guilds"according to their feeding habitats: Mud birds such as snowy plovers and western sandpipers that frequent dry and wet mudflats; Wading birds (avocets, yellowlegs, sandpipers and phalaropes) that are usually seen standing in shallow waters of wetlands; Coastal birds such as sanderlings, oystercatchers and surfbirds that prefer beaches; and Upland birds, killdeers, upland sandpipers and long-billed curlews, the denizens of grasslands and prairies. Within these guilds, different species have many differently shaped bills: long or short, straight or curved upwards or downwards, thin and pointed or thick, or pigeon-like, in all possible combinations. Different shaped bills lead to different feeding styles: there are gleaners, probers, sweepers or priers depending on how they capture their prey, which is mainly crustaceans, insects, snails, worms, clams or other invertebrates.

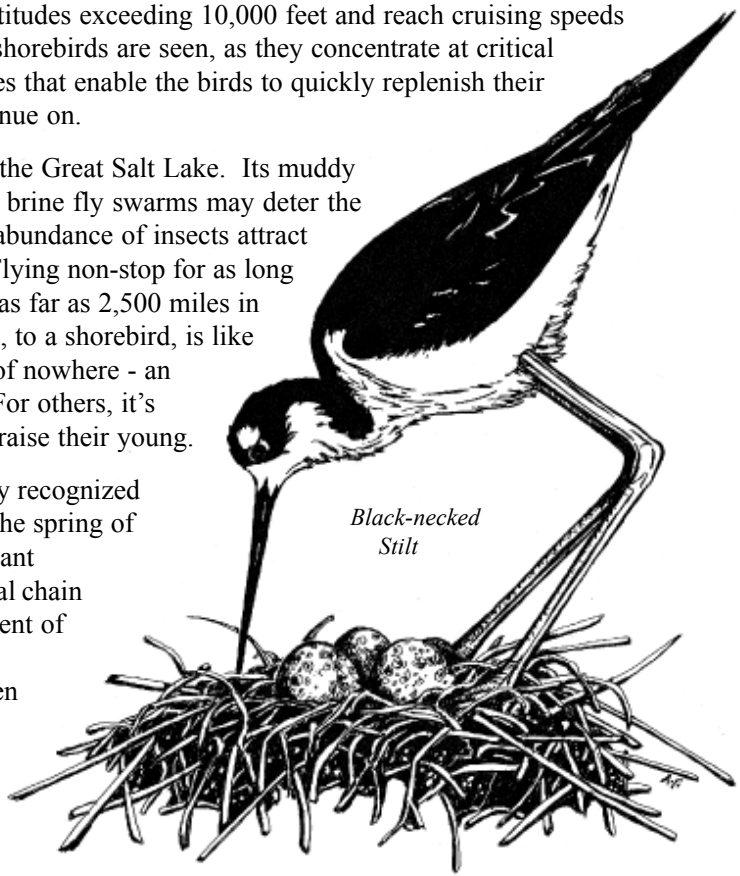
As a group, shorebirds undertake some of the most amazing of long-distance migrations of any North American birds journeying from their artic nesting grounds to winter in Central and South America, and then returning to the Arctic the following spring. Many species travel more than 15,000 miles round-trip. Some fly at altitudes exceeding 10,000 feet and reach cruising speeds near 50 miles per hour. It is during these annual migrations that most shorebirds are seen, as they concentrate at critical wetland staging areas where there is a superabundance of food resources that enable the birds to quickly replenish their energy reserves and continue on.

"The shorebirds funnel to the lake like grains in a giant hourglass. Here they feed and fatten on a teeming, concentrated brew of biological energy."

– Ella Sorensen –
Seductive Beauty of the Great Salt Lake

In Utah, one such site is the Great Salt Lake. Its muddy marshlands and summer brine fly swarms may deter the locals but the ooze and abundance of insects attract millions of shorebirds. Flying non-stop for as long as 60 hours and traveling as far as 2,500 miles in a stretch, the Great Salt Lake, to a shorebird, is like a giant truck stop in the middle of nowhere - an excellent place to stop and fuel up. For others, it's the final destination, a great place to breed and raise their young.

The exceptional value of the Great Salt Lake to shorebirds was officially recognized by the Western Hemisphere Shorebird Reserve Network (WHSRN) in the spring of 1991 when the lake was designated a "Hemispheric Site." This significant designation identified the Great Salt Lake as a vital link in an international chain of sites that provide critical habitat for shorebirds. With nearly 50 percent of original wetlands in the United States already filled, drained, polluted or otherwise degraded, it also highlighted the important connection between protection of remaining wetlands and the conservation of shorebirds.

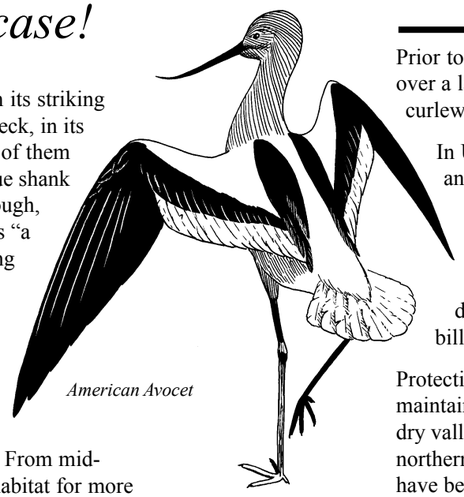


Black-necked Stilt

Take a visit to the Great Salt Lake or other Utah wetland to marvel at some of Utah's sensational shorebirds!

Shorebird Showcase!

American Avocet - *Recurvirostra americana*



American Avocet

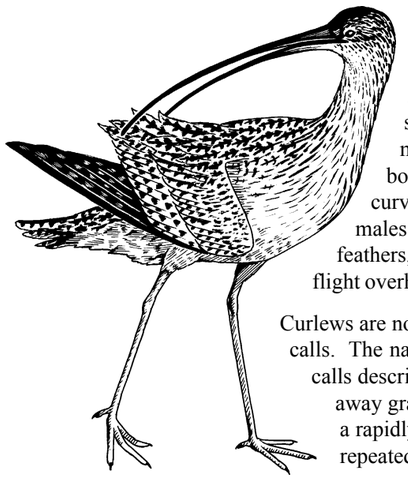
In the world of shorebirds, it's hard to surpass the American avocet for grace and elegance. With its striking black and white wing pattern, tall slender stature and brilliant rusty, cinnamon-colored head and neck, in its breeding plumage, the avocet truly stands out among North American shorebirds as the showiest of them all. Its thin, long legs which are bluish gray in color give the avocet its colloquial nickname of blue shank or blue stockings. The coloration of this stately bird is identical in both sexes. In the females though, the long shiny black upwardly-curved bill, reflected in its Latin name, *Recurvirostra,* which means "a bill that bends backwards," is slightly shorter and more sharply upturned than in the males. During the winter, their colorful head and neck feathers become a soft, pearly gray.

The breeding range of the avocet extends throughout the western United States and the southern prairie regions of Canada. Some winter as far south as Central America, but most congregate along the southern coasts of California and down the west coast of Mexico. Within the Great Basin, avocets are a common and often abundant summer resident. Here, these strangely beautiful birds make their living in the harshest of environments – the shallow, foul bodies of alkaline or brackish water and the fringing flats of mud, alkali or salt characteristic of the region. From mid-march through late summer, the muddy, salty marshlands bordering the Great Salt Lake provide habitat for more than 250,000 avocets, a greater number than any other wetland in the Pacific Flyway.

With very long legs and three webbed front toes, avocets are well designed for wading through and swimming in various depths of water and traversing, without sinking, across their muddy abodes. Their odd-shaped bill is a wonderful food-gathering tool as well. To forage, avocets commonly sweep their sensitive bills from side to side, like a scythe, over the surface of the mud or underwater feeling for their prey and then pausing with each step to swallow it up. Their cuisine of choice is the abundant alkali flies and brine shrimp characteristic of salt lakes. In fact, all avocet and stilt species of the world are salt lake foraging specialists, relying specifically on such habitats.

Avocets locate their nests on dry, sun-baked mud flats or sparsely vegetated gravelly stretches where the view is unobstructed. Nests are mere shallow (less than two inch deep) scrapes in the ground, sometimes lined with a few sticks, pebbles, weeds or feathers. The eggs, usually four in number, are well camouflaged to match their surroundings. When their nests are threatened, avocets engage in quite a repertoire of distraction ploys which include near-miss dive bombs, loud, piercing "*wheat- wheat-wheat*" cries of alarm and theatrical acts of feigned injury.

Although many avocets can still be seen at marshes of the Great Salt Lake such as Ogden Bay and Layton Marsh, some areas outside of Utah that were once important avocet breeding centers have declined by as much as 90 percent. Viewing these stunning shorebirds reminds us of the need to preserve wetland habitats, especially in the arid west.



Long-billed Curlew

Long-billed Curlew - *Numenius americanus*

Standing nearly two feet tall, the long-billed curlew is the largest of the North American shorebirds. This curlew is aptly named in that its long, down-curved sickle-shaped bill is almost as long as the birds' body and longer than the bills of most other shorebirds. The bills of the females are noticeably longer relative to their bodies than those of the males, and are also somewhat straighter with most of the curvature near the tip. Overall, the females are also about one-third larger than the males. Coloration of the sexes is similar, with both sporting brownish-speckled feathers, buffy undersides and cinnamon wing linings that flash quickly as they take flight overhead.

Curlews are notably noisy birds, especially on their breeding grounds, emitting a variety of calls. The name "curlew" is probably derived from one of its most common and characteristic calls described as a long, clear trilled "*curl-e-e-e-u-u-u*" that rises in the middle and then fades away gradually while lowering in scale and volume. Other calls are a loud "*wit-wit, wit-wit*," a rapidly whistled "*kli-li-li-li*" and a loud, sharp "*curlee*" with a rising inflection, often repeated three to four times.

Prior to extensive settlement and the accompanying agricultural development across the mid-west, curlews bred over a large portion of central North America. With the disapperance of most of the prairie, the breeding range of curlews has become restricted to the open uncultivated ranges and grazing lands of the west.

In Utah, the long-billed curlew is a fairly common summer resident and migrant, especially through the central and northern valleys. They usually arrive on their breeding grounds during the last week in March and, after a series of elaborate and sometimes violent territorial encounters between males, establish territories by mid-April. Successful nesting areas are described as higher, dry upland mixed grassy fields with adequate, but not tall grass cover and elevated points. A good number can be found adjacent to the northern, eastern and southern shores of the Great Salt Lake near the edges of barren alkali flats. Curlews feed in two different ways, either pecking and removing food from the ground or vegetation, or probing by inserting their bill into crevices, burrows or soft ground. Insects and other invertebrates, as well as some berries are eaten.

Protection of habitat within the Great Basin, including that around the Great Salt Lake, has become important for maintaining breeding populations of long-billed curlews. Islands of the Great Salt Lake, Promontory Point and the dry valleys north and south of the lake are important long-billed curlew habitats. Curlew Valley, a major valley in northern Utah and southern Idaho, was even named for this species. Threats to habitat around the Great Salt Lake have been on the rise however. Housing development and the resulting human disturbance, including introduction of pets, have posed problems. One curlew species, the Eskimo curlew, has probably already become extinct during the past century. It's up to us to make sure the same fate does not beset the long-billed curlew.

Spotted Sandpiper - *Actitis macularia*

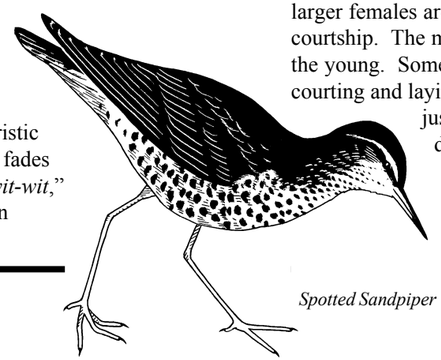
With a breeding range extending east to west across the continent and north to south from the Arctic to the southern United States, the spotted sandpiper is the most widespread breeding sandpiper in North America. Spotted sandpipers have been able to colonize such a broad range by capitalizing on generalist habits – they are able to feed on a veritable smorgasbord of crustaceans, small fish and insects, and frequent almost any area near water from margins of lakes and ponds with sandy or pebbly shorelines to streams with sand or gravel bars, from valleys up to higher mountain elevations. This is the "fishing trip" shorebird, the little bird that entertains and adds unusual delight between casting and catching at mountain lakes across Utah.

Spotted sandpipers, as their common name suggests, wear distinct brownish-black rounded spots on their soft white breasts, though only during the summer. The plumage on their backs is an ashy-olive brown and they have a white stripe over each eye. Even more notable than the spots of the spotted sandpiper is its unique habit of perpetual teetering. As if a bit too delicately balanced, spotted sandpipers literally continually tip or bob their tails up and down in a nervous manner whenever standing or feeding. Even the young, still tiny balls of fluff no larger than the eggs from which they just hatched, run over the sand teetering their tiny little tails. Nicknames such as teeter-tail, teeter-peep and seesaw are a result of this endless teetering. Others such as sand lark, peet-weet and sand peep are a result of a clear, melodious "*peet-weet*" song they often sing.

The flight of spotted sandpipers is curious as well. When flushed from a point along a shore, they don't fly up or down the bank to escape, but instead fly out over the water in a semicircular path alighting farther downstream. They fly low over the water with distinctive shallow, stiff wing-beats. If danger persists they'll do this over and over, and even fly back, when the threat has passed, following a similar semicircular route.

Spotted sandpipers are also among a small minority of birds that show a reversal in their sex roles. The slightly larger females are the ones to arrive first at the breeding area, and are the more aggressive and active players in courtship. The males take on the primary parental role, performing almost all the duties of incubation and care of the young. Sometimes females are even polyandrous, having two or more mates in sequence. Immediately after courting and laying eggs with one male, the female will leave to pair up with another male. Nests are usually located just up the shore of a pond or stream under a bunch of grass or clump of weeds. They are shallow depressions in the ground lined with grasses and leaves.

Next time you're out and about, look for these delightful little shorebirds teetering on the water's edge. Don't wait too long, for in the fall they'll head south to their winter home which may be as far away as northern Argentina.



Spotted Sandpiper

Snowy Plover - *Charadrius alexandrinus*

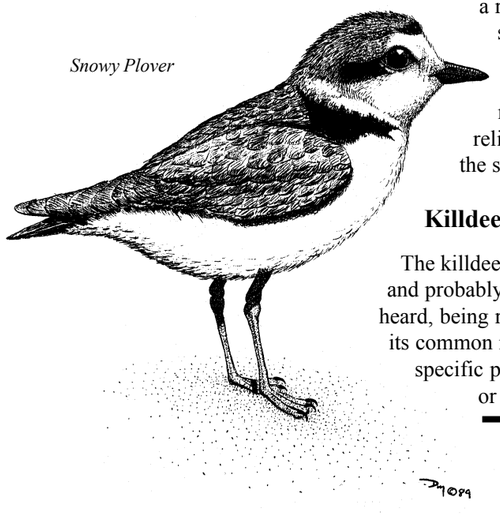
The snowy plover has an extensive distribution, ranging over every continental land mass and many islands of the world. Although the species, represented by twelve subspecies, is cosmopolitan, its numbers are very small. In North America, breeding, resident and wintering populations are scattered mainly along the Pacific and Gulf coasts, and within a few areas of the Great Basin and a few southern interior states. Only about 21,000 individuals inhabit the United States and numbers elsewhere, though not as well documented, are also thought to be low. Along the Pacific and Gulf coasts, populations of breeding snowy plovers are shrinking drastically due to habitat degradation and expanding recreational uses of beaches. The Pacific Coast population is now designated as Threatened by the U.S. Fish and Wildlife Service.

Utah is special in having the Great Salt Lake, and the Great Salt Lake has become especially vital to snowy plovers. Its barren alkali and salt flats support over 10,000 breeding snowy plovers, the world's largest known assemblage, representing 55 percent of the entire breeding population west of the Rocky Mountains. The subspecies found here is the western snowy plover, subspecies *C.a. nivosus*. This little plover specializes in the use of shorelines and mud flats where it carries out its complete life cycle, and the thousands of acres of transitory shorelines, mud flats and sand bars of the Great Salt Lake are responsible for the impressive number of snowy plovers occupying the lake. Here, brine flies and their larvae are among the snowy plover's culinary fare.

Plovers are compactly built, plump-bodied shorebirds with short, pigeon-like bills and large eyes. They are noted for how they run in short starts and stops. They also have long pointed wings that when folded often extend to or beyond the end of the tail which is comparatively short and generally rounded. At about six inches long, the snowy plover is one of the smallest plovers. Poetic license may have been invoked in naming this species because only half of the bird is pure white and that's the lower half. Above they are a uniform pale buffy to grayish-brown in color. Its short black bill, two dark-brown or black linear patches at the sides of the breast and its dark grayish-black legs are what make it distinct. Males sometimes also wear dark ear patches that feather back from behind their eyes.

Snowy plovers breed in loose colonies. Many are site-faithful, returning to the same breeding area in subsequent breeding seasons. Some birds even nest in the exact same location as the previous year. The nest, a mere depression called a scrape, is formed by the male leaning forward on his breast and scratching with his feet while rotating his body. Sometimes existing depressions such as dried animal tracks are used. Both members of the pair contribute bits of debris such as invertebrate exoskeletons, vegetation fragements or pebbles to the scrape by picking them up with their bill and tossing them backward over their shoulder towards the scrape. Three eggs are ordinarily laid. During the heat of the day, the eggs, as well as the birds, are in danger of overheating. Both sexes incubate the eggs to insulate them from the heat.

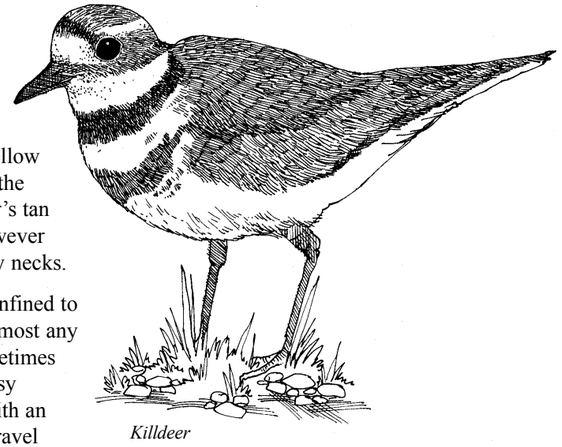
Snowy plover nests and birds at rest are often very difficult to detect on a barren salt flat because they blend in very well with their background. Such camouflage, which is usually a beneficial adaptation, has in some situations become a detriment. Unfortunately, many snowy plover nesting areas around the Great Salt Lake are on sovereign lands where disturbance by people using these areas for recreation, unaware of the presence of plovers, is becoming a real problem. Off-road vehicle use has started to pose an especially significant threat to nesting success. This activity not only increases the chance of eggs being exposed to the elements, but often directly destroys whole nests. Predation by red foxes also poses a threat. A management plan to restrict certain activities may become necessary to relieve pressures on snowy plovers and ensure that they continue to enrich the shorelines of Utah's Great Salt Lake.



Snowy Plover

Killdeer - *Charadrius vociferus*

The killdeer is probably the most widely distributed shorebird over the Americas, and probably also the best known. Not only is it often seen, it is even more often heard, being renowned for its loud and insistent "*kill-dee, kill-dee*" call that inspired its common name. The noisiness of the killdeer is also commemorated by the specific part of its scientific name, *vociferus* which in Latin means vociferous or vocal.



Killdeer

Striking markings and handsome plumage make the killdeer easily recognized. Most obvious is its black, two-strand "necklace" of stripes circling its showy white breast. Long, yellow legs, two black bands across its head, a long, rufous patch on the rump and distinctive red eye rings also complement the killdeer's tan colored wings and back. Males and females are clad alike, however young chicks have only one black ring around their tiny downy necks.

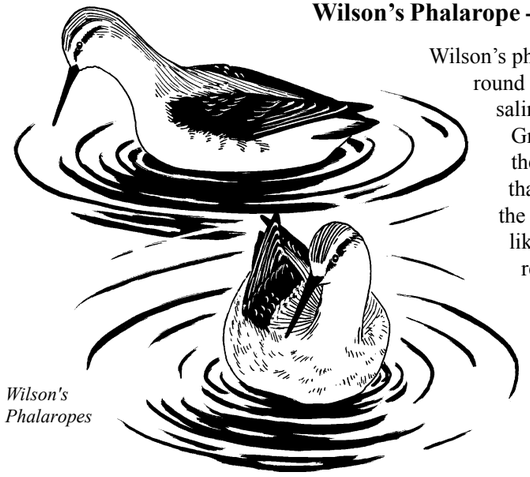
The killdeer is somewhat of a renegade shorebird, not being confined to the borders of lakes or the edges of the sea. It is at home in almost any open country from meadows and farmlands to city parks, sometimes even up to miles away from water. It seemingly isn't very fussy about where it builds its nest, although it does prefer a place with an extended view and plenty of stones, pebbles or gravel. Even gravel roads, rooftops and the spaces between railroad ties will do.

Killdeers are one of the more common shorebirds in the Great Basin during the summer. Some pairs arrive on the breeding grounds already together, but most begin pairing up after they arrive. Elaborate courtship displays take place on both the ground and in the air. In the words of Audubon (1840), "It skims quite low over the ground, or plays at a great height in the air, particularly during the love season, when you may see these birds performing all sorts of evolutions on the wing." Throughout these nuptial affairs, the killdeers repeatedly utter a variety of calls, most notably of which is the "*kill-dee, kill-dee*."

Four greenish-buff eggs, irregularly spotted with black or brown, are almost always laid in the mere scrape of a nest. They are oval and quite pointed in shape, which keeps them from rolling out of the nest. The color of the eggs and their markings make them very hard to see especially since they are usually laid among stones or pebbles that amazingly seem to match. Even though nests are difficult to find, killdeer parents are very protective of their eggs and young and are famous for the "broken wing" act they perform to distract an intruder. During this diversionary routine the killdeer first scurries away from the nest. Then it lowers its wings and hunkers down, exposing its rust-colored rump. Next its flails and drags one or both of its wings against the dusty ground, calling pitifully in distress all the while and continuing until the threat is no longer near. While this tactic works for people, dogs or other predators, for browsing animals such as horses and cows which can trample nests and eggs underfoot, the killdeers must employ a more serious means of defense. If such an animal comes too close, a killdeer will run towards it, with both its wings and feathers flared, and suddenly fly up into its face in an attempt to scare it away.

If all goes well, after 25 days of incubation, the eggs hatch. And, as soon as the moisture has dried from their buffy down, the precocial young are on their feet, eager to leave the nest to feed.

Wilson's Phalarope - *Phalaropus tricolor*



Wilson's Phalaropes

Wilson's phalaropes are long-distance migrants traveling up to 10,000 miles round trip each year between their principal wintering areas on the saline lakes of Argentina and their nesting grounds in the northern Great Plains and Intermountain West. Wilson's phalaropes stop at the Great Salt Lake in extremely large numbers – reaching more than 500,000 during peak abundance in July. The Great Salt Lake is the largest staging area in the world for Wilson's phalaropes, which like many other shorebirds, visit to partake heavily on the rich food resources available in the salty lake and productive wetland habitats of this great inland sea. This dramatic assemblage of Wilson's phalaropes was a key factor leading to the designation of the Great Salt Lake as a Western Hemispheric Shorebird Reserve. Learn more about this fascinating shorebird by requesting the Utah Division of Wildlife's Wildlife Notebook Series No. 6 which features the Wilson's phalarope.

"Bird Beans" *Estimating Shorebird Numbers*

Objective: Students will learn about the importance of fast, accurate estimation of shorebird populations.

Method: Students use beans to model estimation techniques used by biologists to sample shorebird populations.

Background: In their rush to get to their summer breeding grounds as soon as the weather allows, many shorebirds migrate at the same time and gather at the same important wetlands along their migratory flyways. The flocks of shorebirds at these "fueling/rest stops" can number in the hundreds to thousands, or even millions! Some flock sizes in the past, before 19th Century market-hunting wiped many birds out, were even larger.

It is important to make an accurate count of these shorebirds each year, or every several years, so that any changes in populations can be noted. Knowing the changes in numbers within a species permits more successful management of shorebirds and their habitats. How do biologists count such huge flocks and count them fast before the flocks split up or the birds fly away? This activity will help you learn and practice a method used by biologists to estimate population sizes of migrating shorebirds.

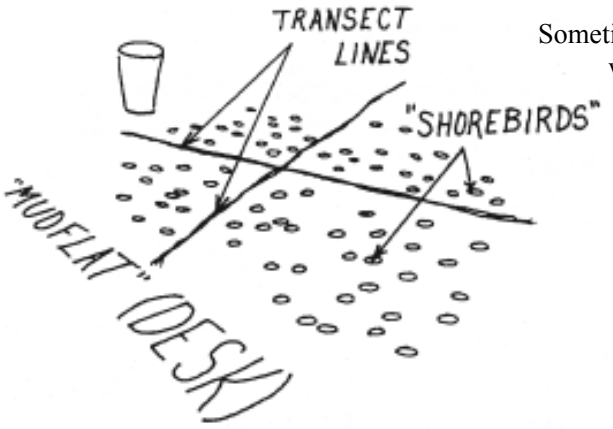
Materials: Small paper cups (one per pair of students), dry beans (enough to fill the cups evenly), string (two 18-inch pieces per pair of students), large sheets of paper - at least 18 x 18 inches square (one per pair of students).

Procedure:

1. Discuss with students the great size shorebird flocks can attain during migration.
2. Distribute one large sheet of paper, two pieces of string, and one cup full of beans to each pair of students.
3. Tell students that each cup of beans represents a population of migrating shorebirds.
4. Have students spread their beans out randomly, with none piled up, out over the large sheet of paper which represents a mud flat bordering a large lake.
5. Next, have students make a guess to estimate how many bean birds they have on their mud flat. Have them record their estimates.
6. Now, have each pair divide their flock into four parts by laying the strings across the center of the mudflat, one from top to bottom and the other from side to side.
7. Have students count all the birds in one square and record the number. Have them multiply this number by four and record that number.
8. Next, have them count and record the number of birds in each of the other three squares. Have them add these three numbers and the number counted for the first square counted earlier. Have them record the result.

Discussion: Ask students to look at the numbers they recorded and compare them. Discuss the results as a class. Which estimate was closer to the actual number, their guesses or the result of multiplying the birds found in one quarter of the area by four? Who guessed high and who guessed low? How can we estimate the total number of bean birds the entire class has with out actually counting them? (Total up the number of pair of students and multiply that number by the number of beans your group has.)

Tell students that when they look at a real flock of shorebirds they won't be able to divide it with string. They will have to use their eyes to divide the flock into about five or ten equal groups and then multiply to obtain a total for their estimate. Biologists sometimes estimate more quickly by concentrating on what clusters of a few birds look like and then counting clusters of birds. Students can practice this by setting aside five bean birds and concentrating on what they look like as one group. They can then count their flocks by clusters of five to get a faster guess.



Sometimes biologists will use a "transect frame" with about a two-inch square window. First they judge how many two-inch squares frames will fit across the expanse of the mud flat. Then they count how many birds are in one window and multiply that number by the number of frames. Have students try this on their "mud flats." Then take them on a shorebird field trip to test their newly learned estimation skills.

Adapted with permission from the *Arctic Nesting Shorebirds* Curriculum produced by the U.S. Fish and Wildlife Service. Available for checkout from Project WILD.

Resources

Real as A Snipe Resources -- And No Need to Hunt for Them!

Call Project WILD at (801) 538-4719

Shorebird Resources:

The Wilson's Phalarope - One in the series of four-page fact sheets in the Utah Division of Wildlife Resources' Wildlife Notebook Series.

Animal Superheros? - An excellent activity-packed and infomative shorebird newspaper for students created by the Shorebird Education Project.

The Great Salt Lake: Utah's Amazing Inland Sea - A wonderful, information-filled, 32-page color newspaper insert featuring various aspects of the Great Salt Lake, including the shorebirds that visit this amazing inland sea and the best places to view them.

A Heap o' Hazards: Hurricanes, Habitat Loss and More! - An exciting and fun simulation activity featuring the hazards faced by migrating shorebirds modeled after the Project WILD activity, "Hooks and Ladders."

Shorebird Identification Guide - Great set of handouts to aid those interested in learning how to better identify shorebirds. Includes an ID key, handouts describing distinctive features of various shorebird groups, some fact sheets on shorebird species, a page discussing how to make more accurate estimates of shorebird flock sizes and more.

Shorebird Migration Stopover Locations on the Pacific Flyway - Nice poster highlighting migratory shorebird stopover sites along the Pacific Flyway including the Great Salt Lake.

Arctic Nesting Shorebirds - Beautifully illustrated, two-sided poster featuring the breeding and non-breeding plumages of a variety of shorebirds.

Available For Check-out:

Arctic-Nesting Shorebirds: Curriculum Teacher's Guide, K-12 - An outstanding, comprehensive shorebird study curriculum full of great activities, produced by the US Fish and Wildlife Service. Sections in the guide include shorebird adaptations, habitat needs, nesting and breeding behavior, migration studies and field trip guidelines and activities.

The Amazing Journey of the Migrating Shorebirds - The annual migration of shorebirds on their journey from South America to northern Canada is the focus of this fun and interesting video in which young students track the migration electronically by staying in touch via e-mail with pen pals along the migration route. Length: 18 minutes. Grades 3-7.

Shorebird Educational Activity and Materials Trunk - A great trunk featuring shorebirds, containing activity guides, posters, videos, puppets, flock size estimation computer game and more.

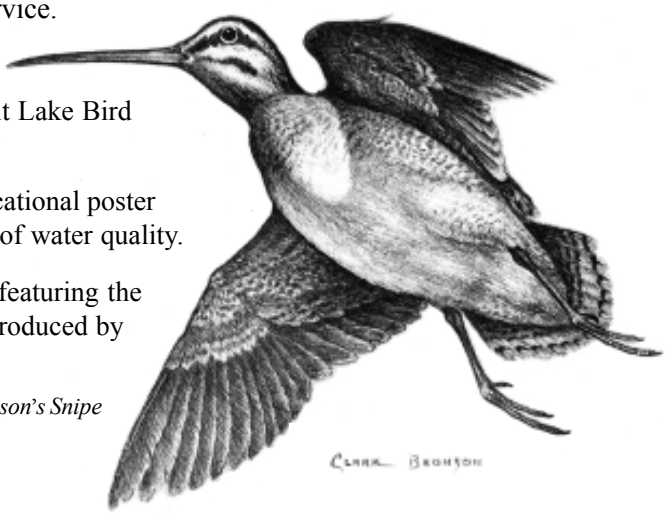
Shorebird Slide Show - A wonderful introductory slide set and script featuring shorebirds, produced by the Sister Schools Shorebird Program of the US Fish and Wildlife Service.

Other Free Posters:

Great Salt Lake Bird Festival - Poster from this year's Great Salt Lake Bird Festival featuring the elegant black-necked stilt.

Benthic Macroinvertebrates - Beautiful, well illustrated and educational poster featuring bottom dwelling stream organisms, important indicators of water quality.

Brine Shimp in the Great Salt Lake - Great educational poster featuring the life cycle and economics of brine shimp in the Great Salt Lake. Produced by the US Geological Survey. Best for secondary grade levels.

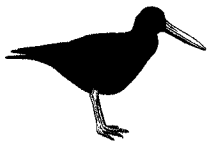


Wilson's Snipe

2) Concentrate on Standing Birds and Study the Silhouettes: Shape sometimes works better than color because light tans, creamy buffs and subtle grays tend to wash out in bright light of open areas where shorebirds often are seen. Seasonal changes of shorebird plumages are complex and variable too. All species have at least three visibly distinct plumages: juvenile, adult winter (basic), and adult breeding (alternate). Names of species unfortunately are not often helpful in this regard. Only a handful have names consistently linked with their field identification and some are even contradictory.

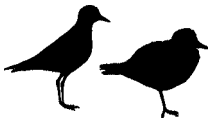
Large with a down-curved bill - whimbrel, curlews

Large with upturned bill - godwits

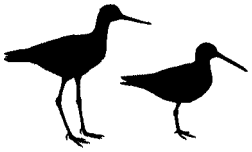


Large with thick straight bill - oystercatcher

Large to Medium-sized, long legs, long thin straight or upturned bill - avocets, stilts



Medium-sized, stocky with a short bill - plovers, turnstones, surfbird



Medium-sized with a long straight bill - dowitchers, snipe, yellowlegs

Small-sized, swimming, thin bill - phalaropes

Medium-sized with long straight, needle-like bill - most sandpipers

Small-sized with long straight, needle-like bill - small sandpipers (peeps)

Some Utah Shorebird Viewing Sites:

Farmington Bay Wildlife Management Area
Bear River Migratory Bird Refuge
Ogden Bay Wildlife Management Area
Antelope Island State Park
Utah Lake
Cutler Marsh, Cache Valley

3) Divide and Conquer: This is pretty much a process of elimination that applies somewhat to the plovers, but most of all to the sandpipers. After determining that a species is not one of the easily identified species, and not a more rounded, short-necked, stubby-bodied, short-legged, thick-billed plover, use this method as a sandpiper sorting system.

- Does it have a weird eye-catching bill?
- How long is its bill compared to the length of its head?
- How long are its legs in comparison to its body height? (Is it a "long-legged" or a "plump"?)
- Is it a "peep"? - the smallest of the sandpipers, those tiny little brown and gray puzzles swarming in the hundreds or thousands, the most often seen but least identified shore birds better left to the most advanced birders!

If you're bold, give it a try. Get yourself some binoculars, a good field guide and a serious dose of patience and practice. Eventually it will pay off!

Suggested Resource Books:

Shorebirds of the World by Hayman, Marchant and Prater (1986);
Shorebirds of the Pacific Northwest by Paulson (1993);
The Complete Birder: A Guide to Better Birding by Jack Conner (1988).

Need Some More Help? Shorebird Internet sites:

Western Hemisphere Shorebird Reserve Network (events, workshops, information)
http://www.manomet.org/WHSRN.htm

The Shorebird Watcher
http://home.netcom.com/~djhoff/shorebrd.html

The Virtual Birder (Gallery)
http://www.virtualbirder.com/vbirder/

Images of North American Shorebirds
http://www.utm.edu/~phertzel/shimages.htm

Shorebird Photo Guide
http://columbia-pacific.interrain.org/ahscience/shorebird.html

Bird Songs and Calls
http://www.mbr.nbs.gov/id/songlist.html

Action

Shorebird Sister Schools Program and Linking Communities, Wetlands and Migratory Birds Migrate With Us!

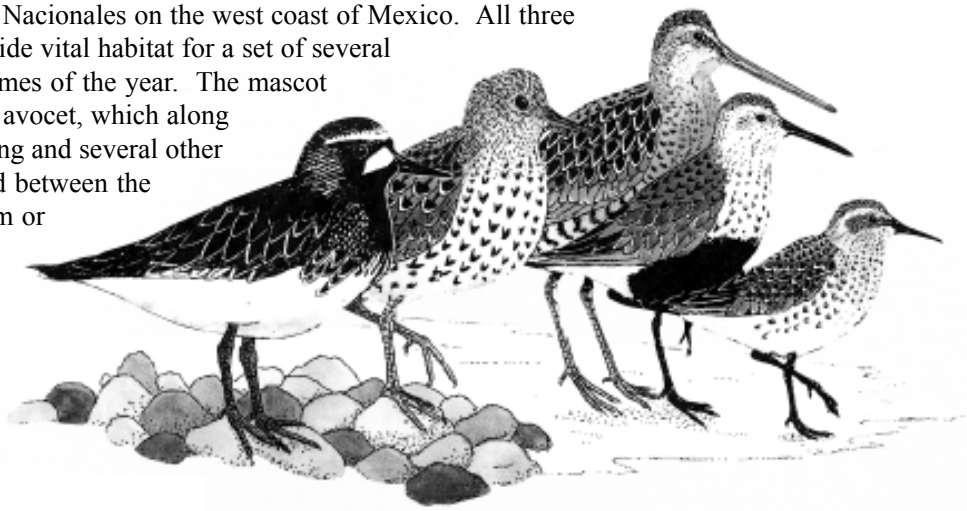
Shorebird Sister Schools Program: The Shorebird Sister Schools Program, a web based program sponsored by the U.S. Fish and Wildlife Service, is an exceptional program that enables students to track the amazing annual migrations of shorebirds worldwide and share their experiences with other "sister schools" around the globe via an e-mail listserve.

As a subscriber to the e-mail listserve, fws-shorebirds, students can receive mail from other shorebird pen pals around the world and have the opportunity to send messages back. Listserve subscribers participate from throughout the world and are from broad backgrounds. For example, biologists contribute data from their field research, schools send postings from their shorebird/wetland field trips, environmental educators share activities/programs, shorebird enthusiasts add migration observations and managers distribute information about conservation efforts for shorebirds. As a subscriber to the fws-shorebirds listserve, students can also ask questions of participants, contribute data, share information about programs, or follow the migration of shorebirds. To subscribe to the listserve, send an e-mail message to listserve@www.fws.gov. For the message type "Subscribe fws-shorebirds" followed by your complete name.

Student can cruise the "Super Shorebird Flyway" at the program's web site http://www.fws.gov/r7enved/sssp.html. The site includes maps of stopovers and migration pathways, activities for kids, materials for teachers, links to other related sites, information about shorebirds and their habitats and an archive of the e-mail listserve postings. Photos and maps can be downloaded to use in class activities or projects and updates are posted regularly to inform everyone of the progress of shorebird migration throughout the year.

The Sister Shorebird Schools Program has also developed an excellent comprehensive shorebird activity guide for grades K-12, titled Arctic-Nesting Shorebirds. The curriculum is an easy-to-use, multidisciplinary guide designed to help educators lead students in an investigation of shorebird and wetland ecology in a fun, activity-based way. The 300-plus pages explore shorebird biology, ecology, wetland conservation, migration, field biology and cultural awareness. Units cover topics from shorebird adaptations and shorebird migration to conducting shorebird field trips! The curriculum has also been correlated to the National Standards. This outstanding activity guide can be checked out from the Project WILD office by calling (801) 538-4719. It can also be ordered for $22.95 plus S&H from Circumpolar Press P.O. Box 1125, Homer, AK 99603. Phone: (907) 235-8757.

Linking Communities, Wetlands and Migratory Birds: Still in the early stages of development, the Linking Communities, Wetlands and Migratory Birds is a shorebird educational program with international ties. The program, sponsored by Wetlands International, is working in Utah to involve schools and communities in a linked network between the Great Salt Lake, Utah, Chaplin Lake and the Quill Lakes in Saskatchewan, Canada and an area known as Marismas Nacionales on the west coast of Mexico. All three of these areas are wetland sites that provide vital habitat for a set of several different shorebird species at different times of the year. The mascot for the program in Utah is the American avocet, which along with the marbled godwit, willet, sanderling and several other shorebirds, are among the species shared between the three sites. For details about the program or how your students can become involved in this excellent internationally and locally significant shorebird education program, contact Vickie Roy, Bear River Migratory Bird Refuge (435) 723-5887 or Yaeko Bryner, Wasatch Elementary School, (801) 625-8839.



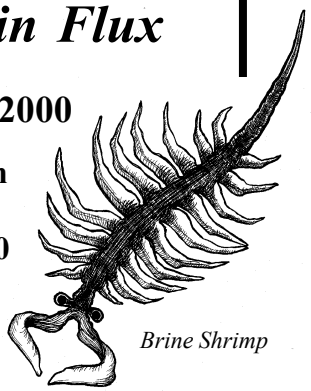
Advanced Wildlife Workshop

The Great Salt Lake: An Ecosystem in Flux

August 25-27, 2000

Registration Deadline July 7, 2000

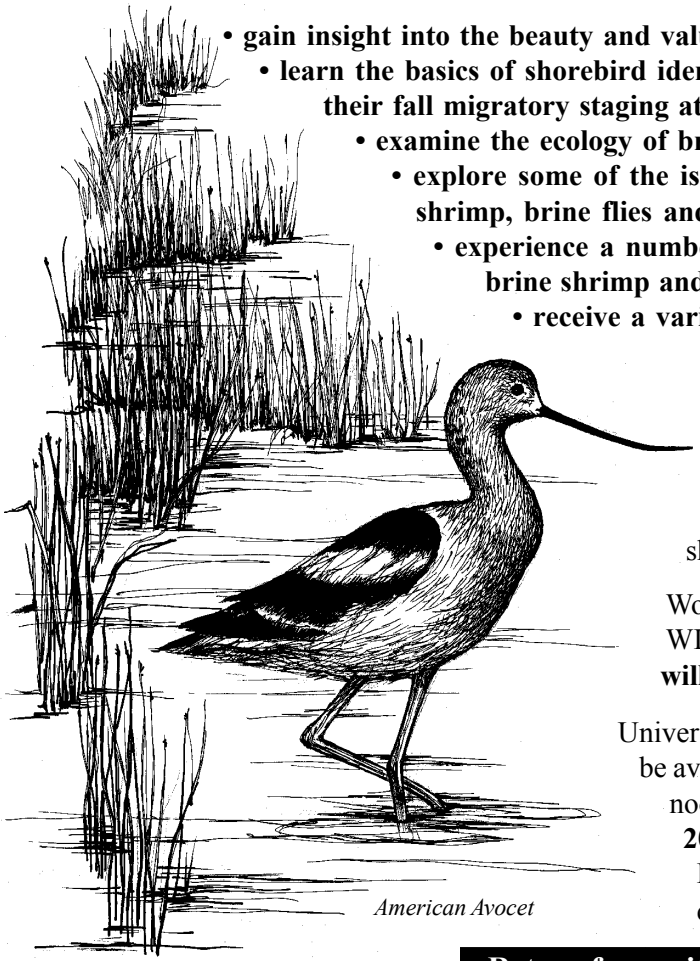
Join Project WILD for an exciting and informative wildlife education workshop featuring the Great Salt Lake and changes impacting this amazing ecosystem. The primary focus of this workshop will be shorebirds, brine shrimp and brine flies, and the ecological and economic issues associated with these species plus their relationship to the Great Salt Lake. A morning of shorebird observation with biologists in the field and an afternoon of boating on the lake to study brine shrimp will make this an opportunity not to be missed!



Brine Shrimp

During this workshop participants will have the opportunity to:

- **gain insight into the beauty and value of the Great Salt Lake, Utah's Incredible Inland Sea;**
- **learn the basics of shorebird identification and observe shorebirds in the wild during their fall migratory staging at the lake;**
- **examine the ecology of brine shrimp and the role they play in Utah's economy;**
- **explore some of the issues and problems surrounding shorebirds, brine shrimp, brine flies and the Great Salt Lake ecosystem;**
- **experience a number of wildlife education activities dealing with shorebirds, brine shrimp and brine flies; and**
- **receive a variety of wildlife education materials for use with children.**



American Avocet

The opening session will begin at the Utah Department of Natural Resources. Later we'll van-pool to Antelope Island. We will be camping in a rustic setting for two nights. Saturday will feature shorebirding and a boating excursion on the Great Salt Lake to sample and observe brine shrimp. Project WILD will provide all meals.

Workshop Fee is $65. Limit: 20 people. Prerequisite: Project WILD Workshop. **Cancellations received after July 28, 2000 will be subject to forfeiture of the workshop fee.**

University graduate credit and state inservice/recertification credit will be available. Times: Mid-morning of August 25 through the afternoon of August 27, 2000. Mail registration and fee by **July 7, 2000** to: Project WILD, Utah Division of Wildlife Resources, PO Box 146301, Salt Lake City, Utah 84114-6301. If you have questions, please call Diana Vos at (801) 538-4719.

Return form with $65 check payable to UDWR

Name _____ Phone (h) _____ (w) _____

Address _____

_____

Occupation _____

Project WILD Workshop taken when? _____ and where? _____

project WILD

Utah Division of Wildlife Resources
1594 West North Temple, Suite 2110
PO Box 146301
Salt Lake City, Utah 84114-6301

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